

2459-1-003 CIP (Sheet 1 of 30)

Structure-based sequence homology alignment of bromodomains

	770	α_2	740	α_A	760	α_B	800	α_C	820
hspCAY	719-	SEPRDPIQLVSTKLSTLQVKHGD							
		... SAMPME. PYKRE. APOYYEVITSP... .							
hsgcn5	363-	GKEKQDQLQVLTQKRNLLAQKSHH							
ttps5	280-	LAKKSERKFLNQCCANVTEENRHKQ							
scCn5	324-	AQRPRKGHDIAQNLTELHNAH							
hsp100	1046-	KHIFK. PIELQDQALMPTLAEYLQDQ							
	1082-	PESLPIRQ. PUDPOLGICIPYDITVSP...							
macBP	1083-	KHIFK. PIELQDQALMPTLAEYLQDQ							
ceYnj1	861-	DTVFS. QDILTKFLPEWKEQDSE							
hscgg1	1376-	RHIDPDMQPLSISLSTESTINDRQH							
nsCgg1-1	1371-	RHIDPDMQPLSISLSTESTINDRQH							
hscgg1-2	1498-	LIDDDQDQAFSPLDIDNTDORMAV							
nsCgg1-2	1493-	LIDDDQDQAFSPLDIDNTDORMAV							
hsRing1-1	24-	KICRVT. NOLOYLHUVVYKALMKGQ							
hsORFk-1	31-	KGRKT. NOLOYQMVVYKTRHQQ							
chmSh1-1	31-	RGRNT. NOLOYQMVVYKTRHQQ							
schOpf1-1	148-	NIP1PKHOKHHLAKAKVRLK							
hsRing1-2	295-	KKCKL. PQLKNCNLKELISAKH							
hsORFk-2	304-	KGRKL. HLLAYCSTLKEFLPSKQ							
chmSh1-2	473-	NPEKLS. ULLASCEKULKEFLPSKQ							
scBnf1-2	311-	KSKRLQ. QAKPCQSKULKEMLAKH							
hsRing1-1	626-	MEMOLPMLLRLTBLQDQEDQ							
hsORFk-1	594-	SEPOEIGAQKWTMVAQRAA							
chmSh1-1	41-	NIP1PDIJAVCHETLNTDKEQ							
99Pb1-1	174-	SEPGYL. PUDPOLGICIPYDITVSP...							
99Pb1-2	374-	TMOTUNPLTQDITVSPCRNNQQ...							
99Pb1-1	511-	SPKNSKPKM. PQLKNCNLKELISAKH							
99Pb1-1	647-	KXSKYKPT. PQLKNCNLKELISAKH							
spkro-1	5-	ANAPDFTKDFDVEALVGUNQNE							
spkro-2	138-	GRNEIDIVKQUNLDAHLERKEDQ							
ssm12a	1377-	SPNPKPKLQKRNAAIDTVINKQSS							
hsBrg1	1416-	SPNPPLIKKQKKTDAVTVYKQSS							
99Brg1	1373-	SPNPPLIKKQKKTDAVTVYKQSS							
99Brg1	1436-	SPNPPLIKKQKKTDAVTVYKQSS							
hsTf1fb	694-	AKLSPANGRCKEVLALAFCH							
hsTf1fa	694-	AKLSPANGRCKEVLALAFCH							
hsTf1fb	865-	TKLPTDMDRGERLJLTCHE...							

Figure 1

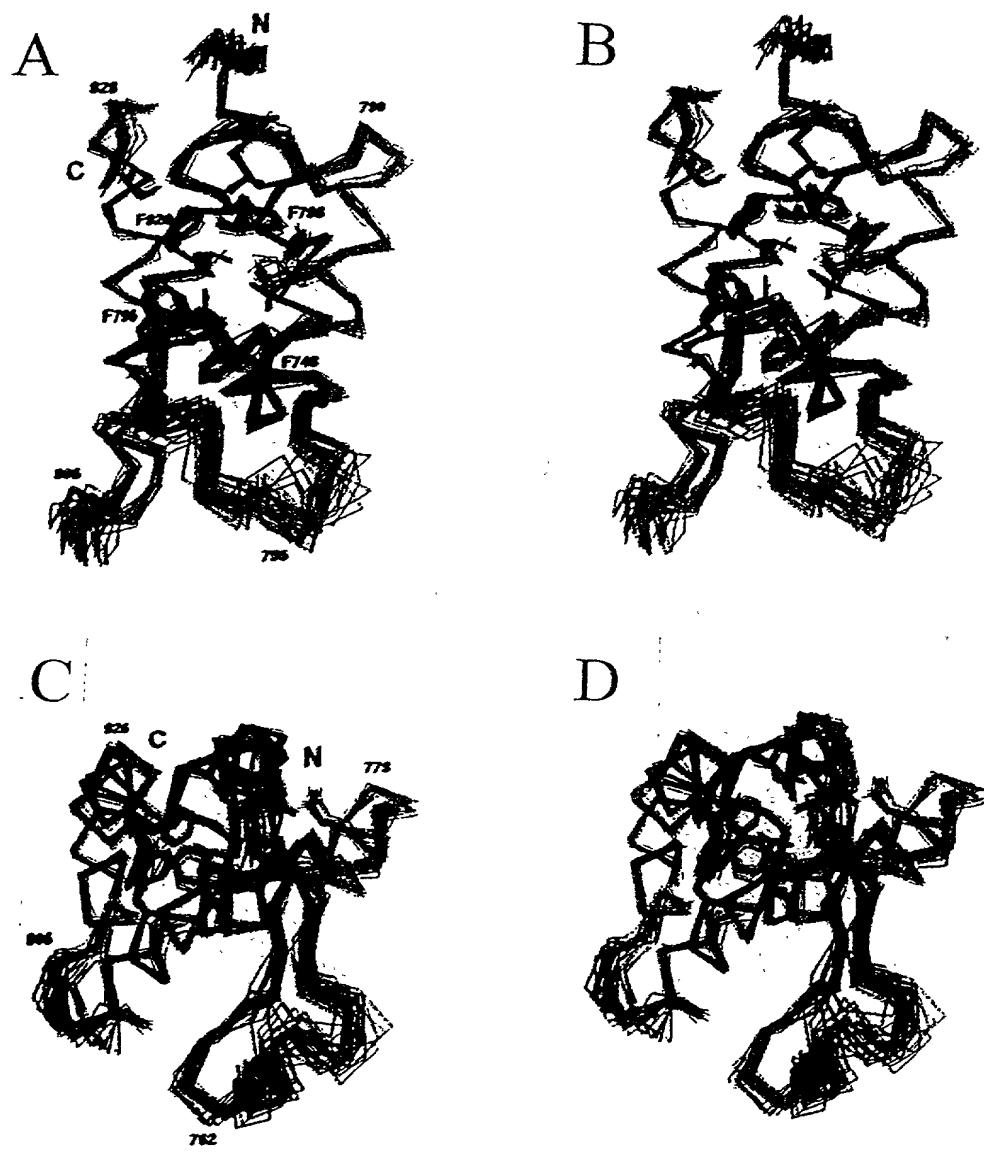


Figure 2A-2D

Three-Dimensional Structure of the P/CAF Bromodomain

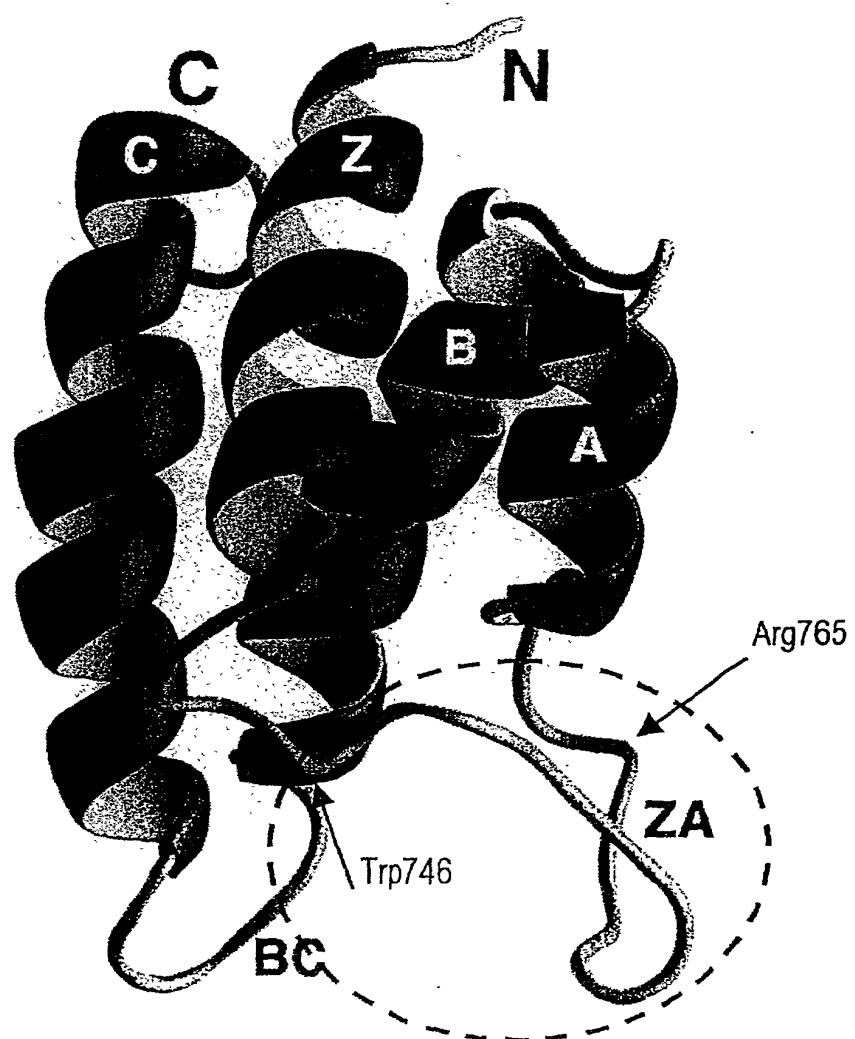
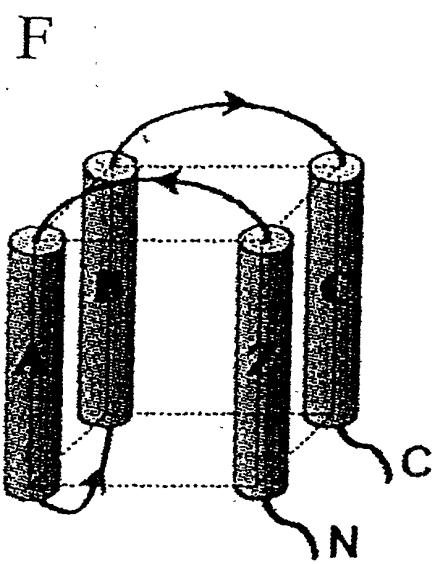
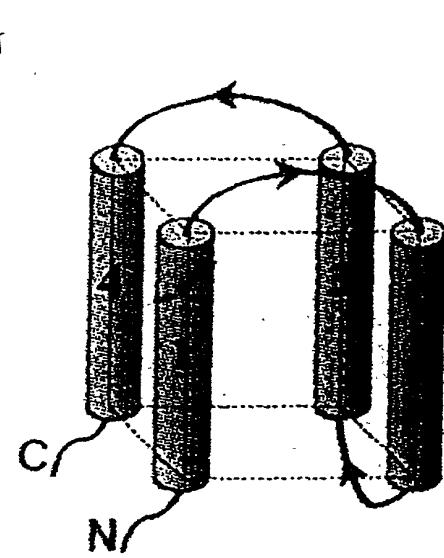


Figure 2E



Left-handed bundle



Right-handed bundle

Figure 2F-2G

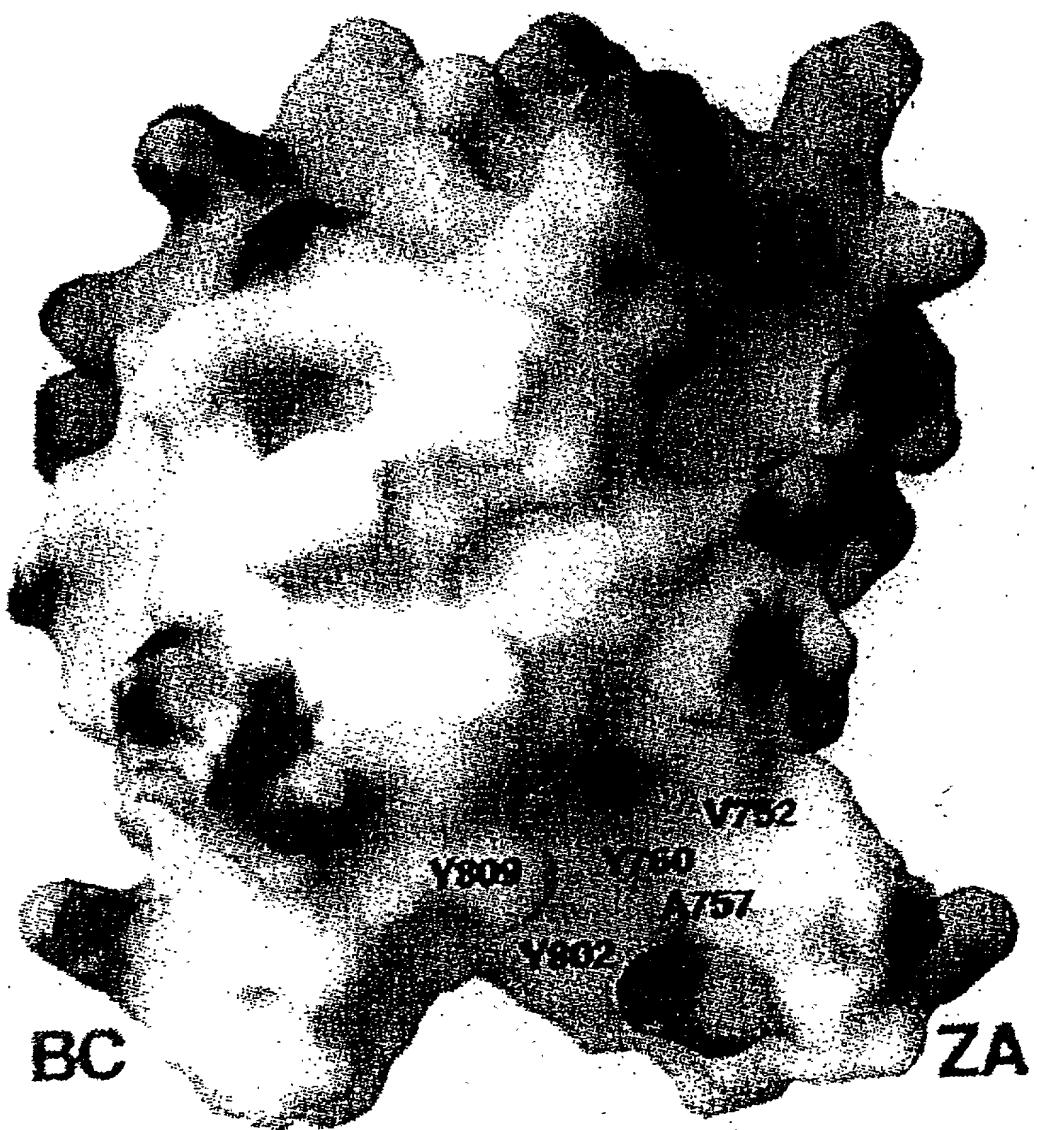


Figure 2H

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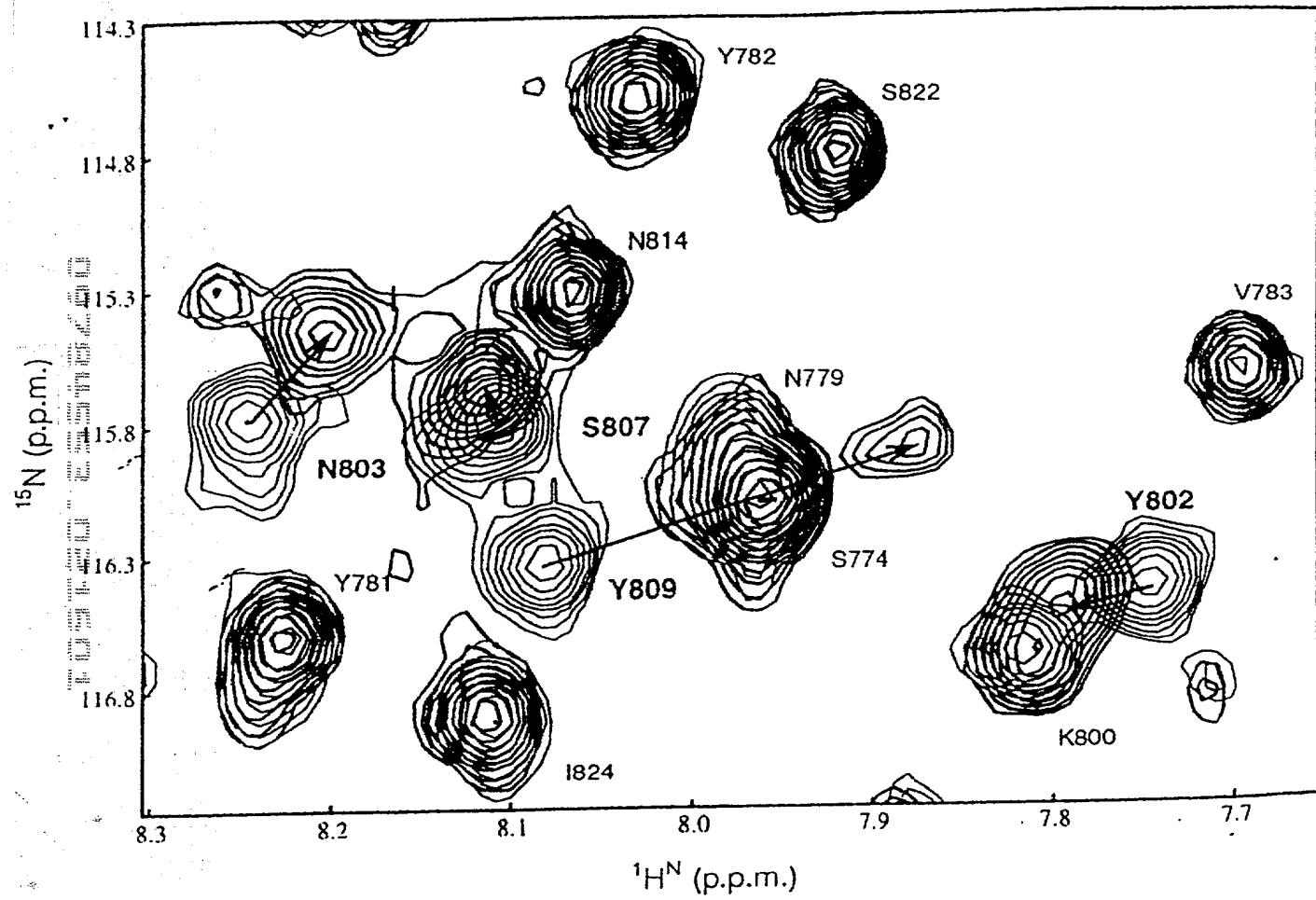


Figure 3A

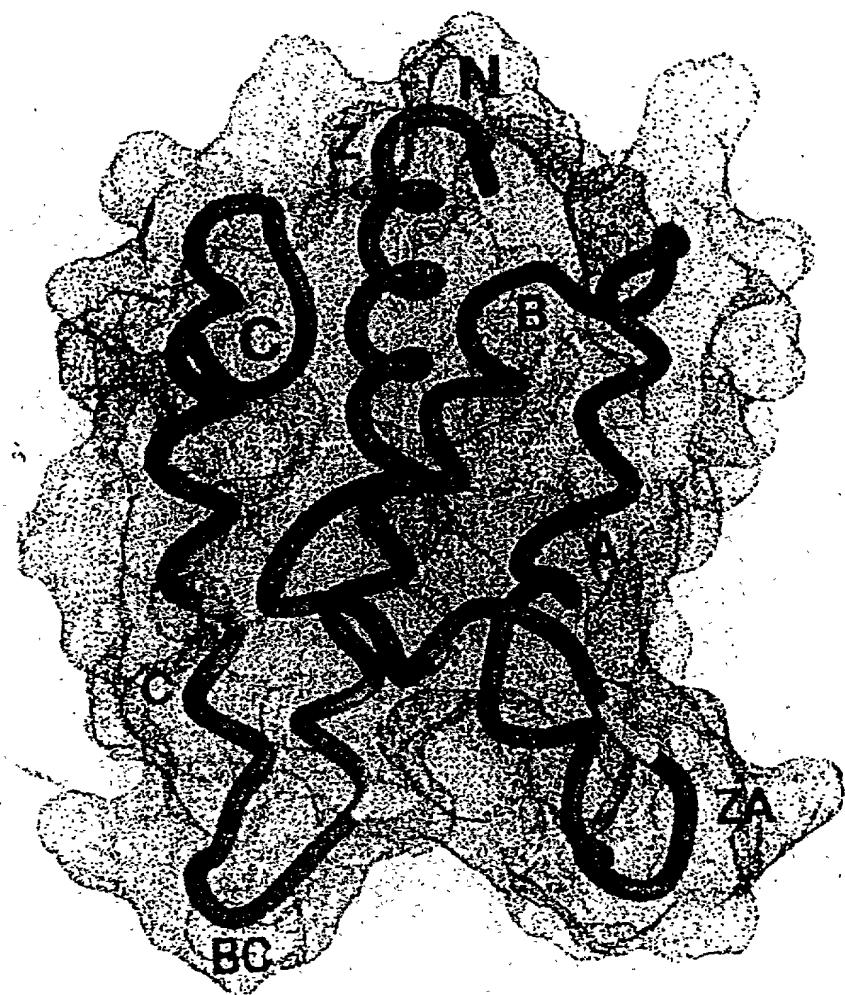
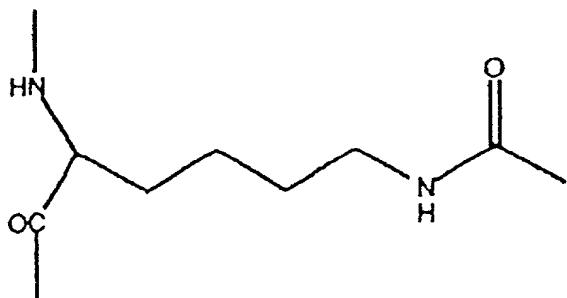
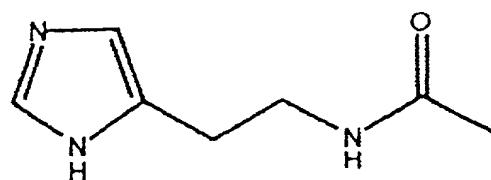


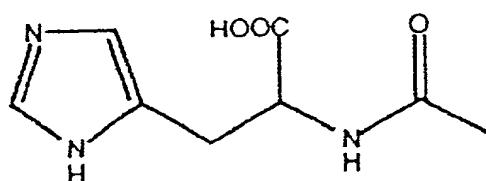
Figure 3B



N^ε-acetyl-lysine



N^ω-acetyl-histamine



N^α-acetyl-histidine

Figure 3C

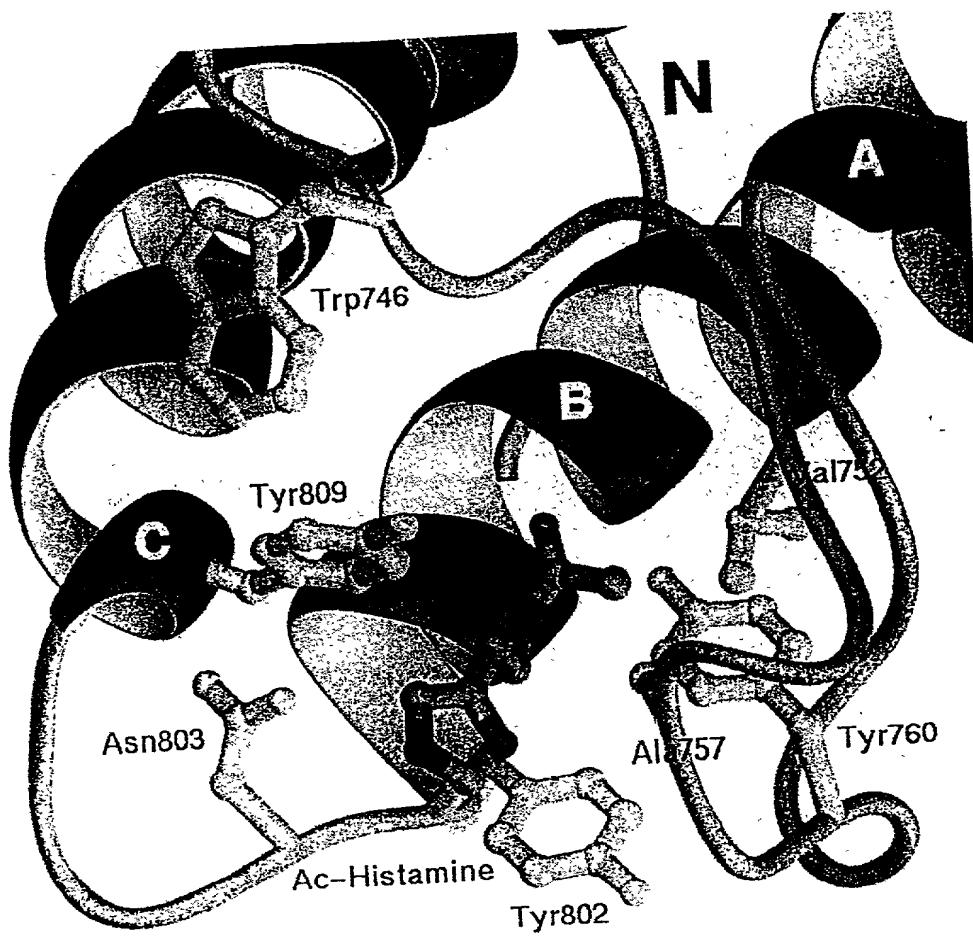


Figure 4

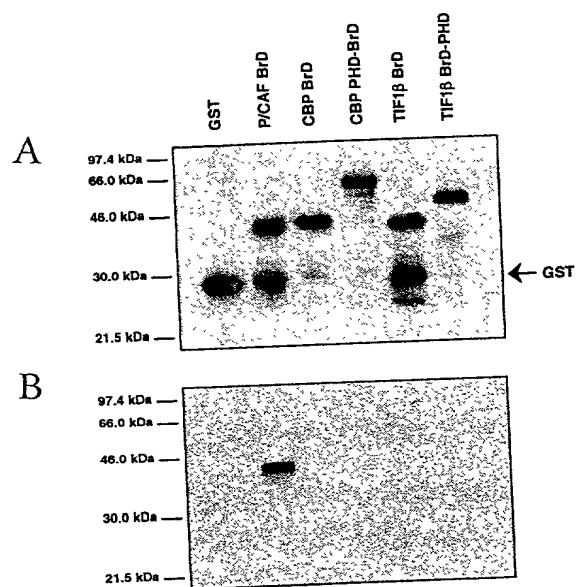


Figure 5

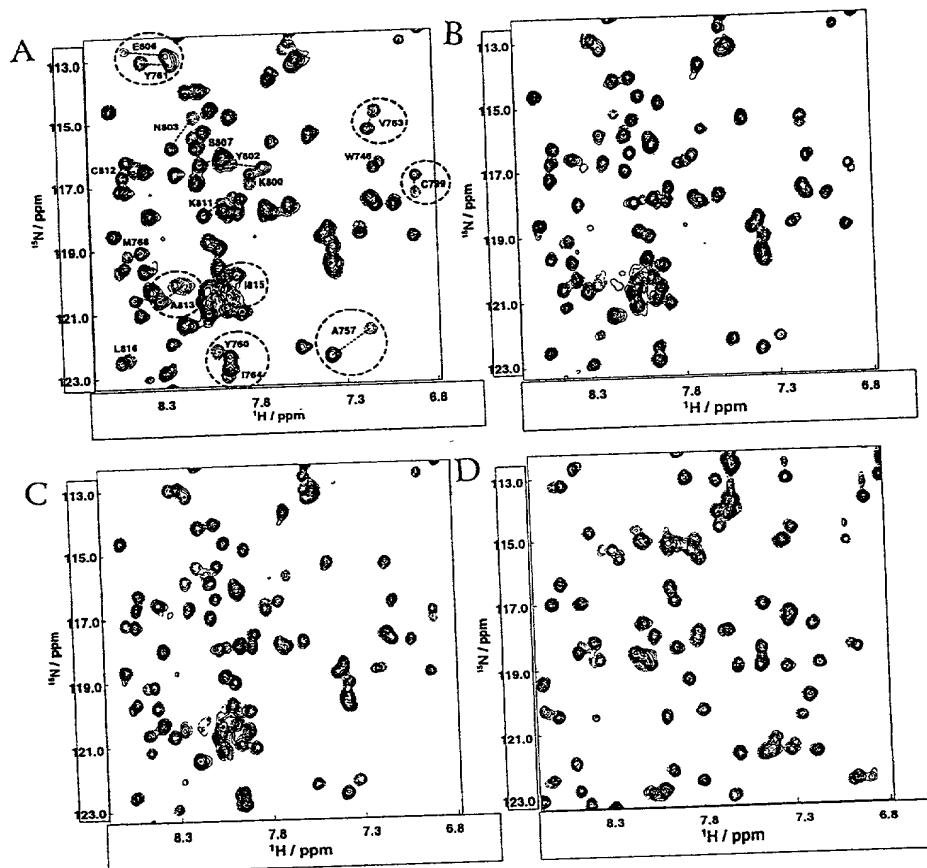


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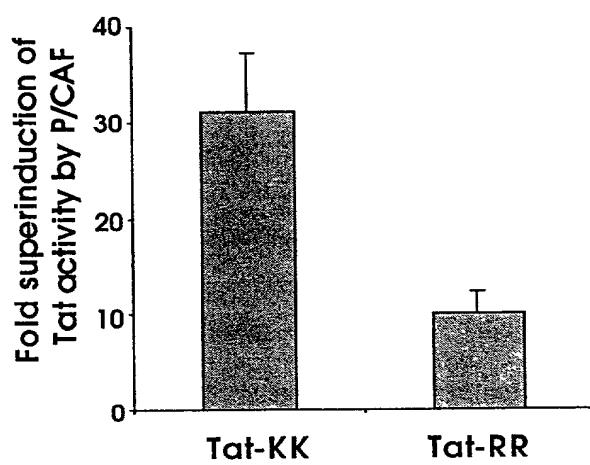


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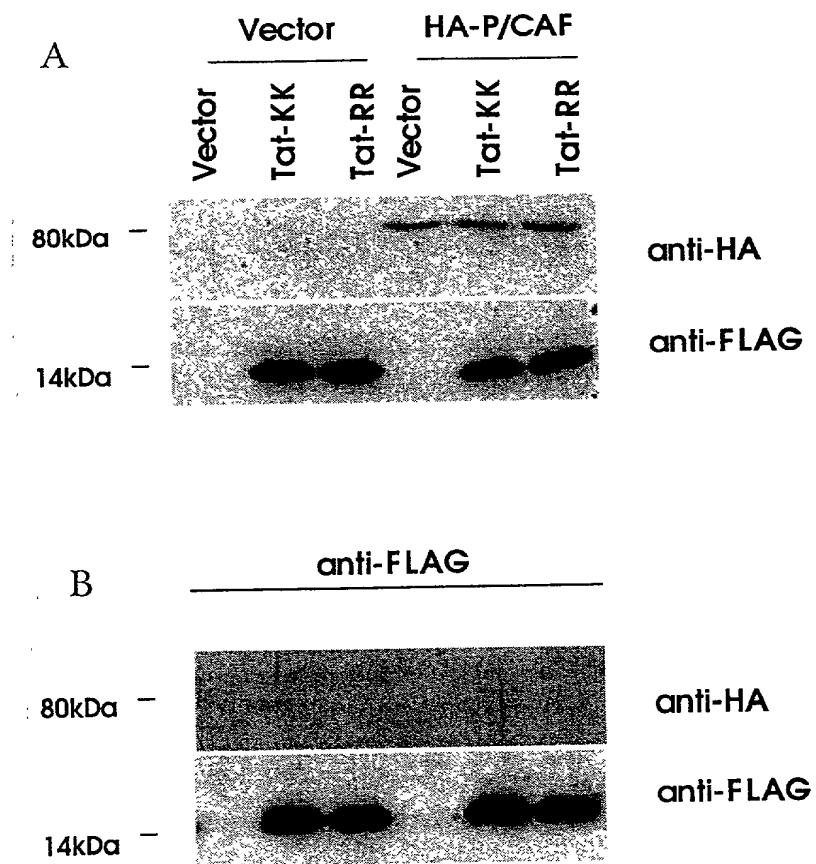
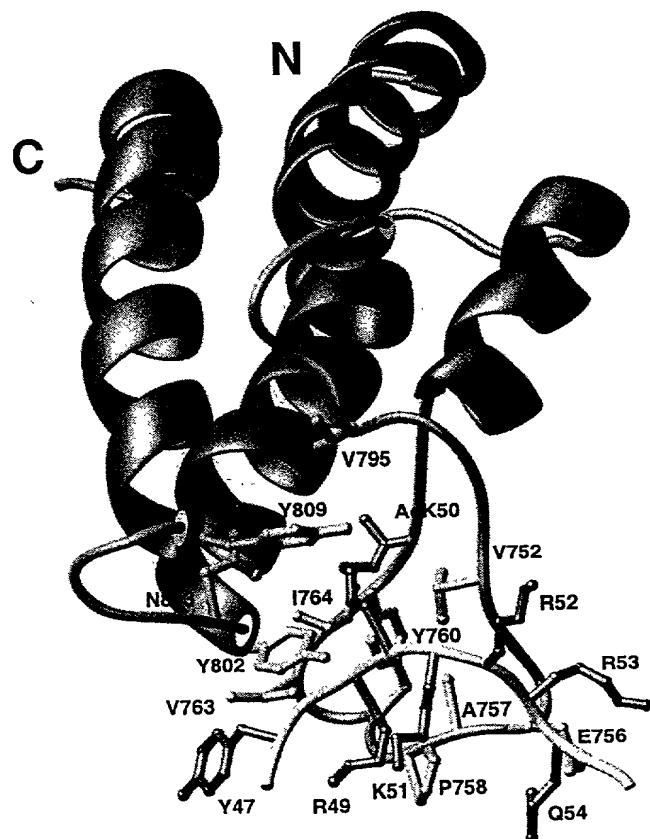


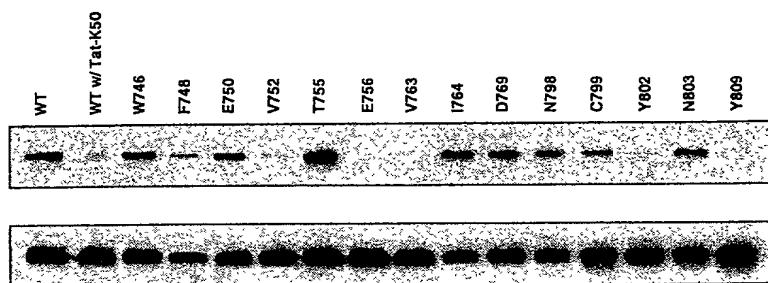
Figure 8



HIV-1 Tat Peptide: **SYGR-AcK-KRRQRC**

Figure 9

A



B

1. Control
2. Tat_K50 (aa 46-55) SYGR-**K**-KRRQRC
3. Tat_AcK50 SYGR-**AcK**-KRRQRC
4. Tat_AcK50_Y47A SAGR-**AcK**-KRRQRC
5. Tat_AcK50_R49A SYGA-**AcK**-KRRQRC
6. Tat_AcK50_K51A SYGR-**AcK**-ARRQRC
7. Tat_AcK50_R52A SYGR-**AcK**-KARQRC
8. Tat_AcK50_R53A SYGR-**AcK**-KRAQRC
9. Tat_AcK50_Q54A SYGR-**AcK**-KRRARC
10. Tat_AcK51 SYGRK-**AcK**-RRQRC
11. Tat_AcK28 (aa 23-33) TNCYCK-**AcK**-CCFH
12. Histone H4_AcK16 SGRGKGGKGLGKGGA-**AcK**-RHRK

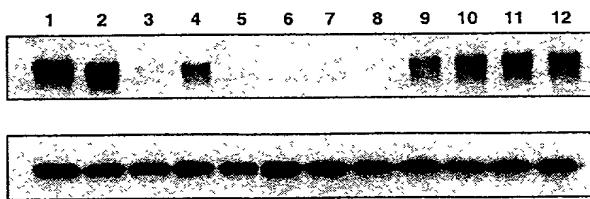


Figure 10

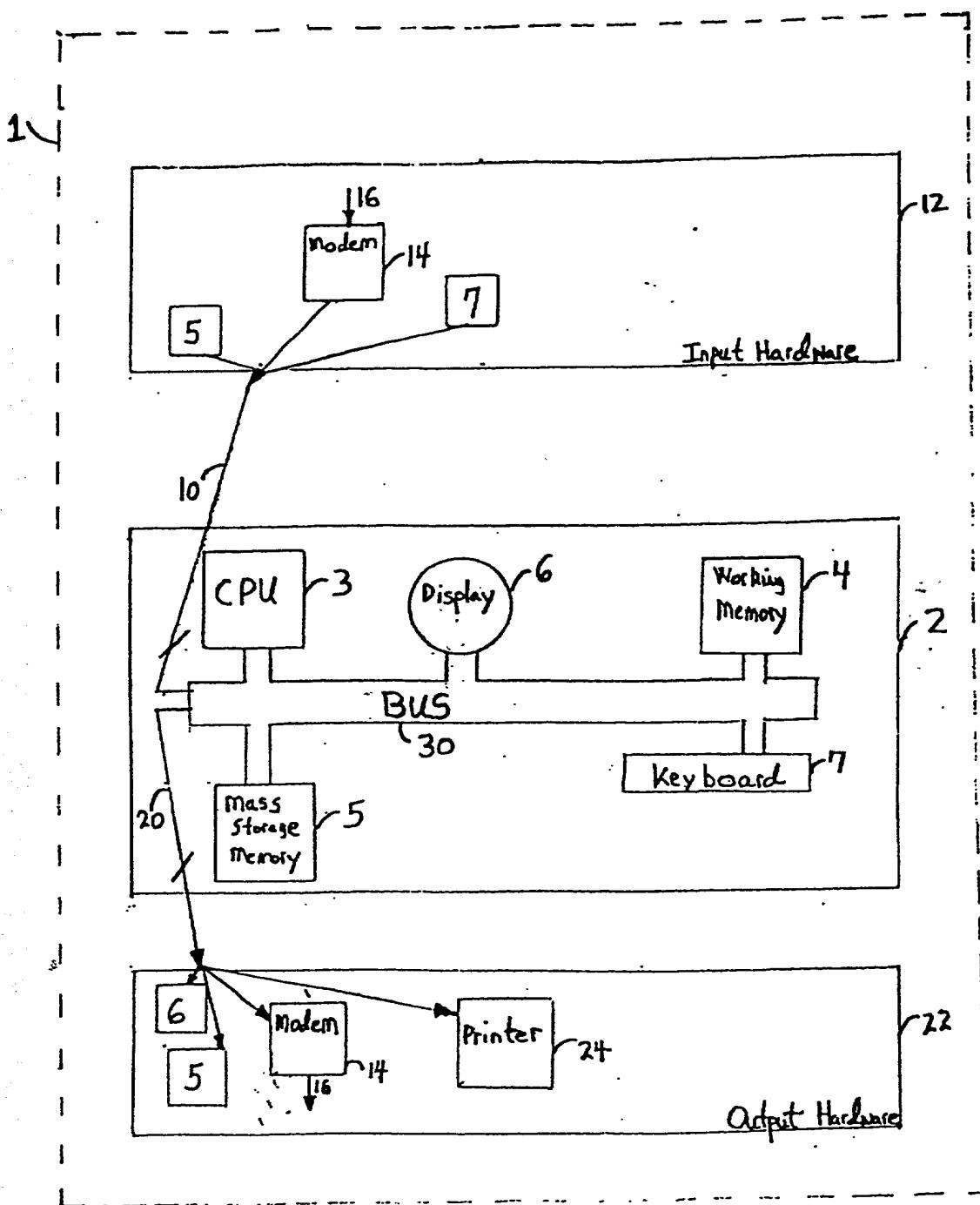
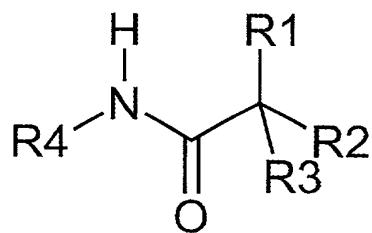


Figure 11



Where:

$R_1, R_2, R_3 = H, CH_3, X$ (halogen: F, Cl, Br, I), OH, SH, or NH_3^+

$R_4 =$ alkyl, aryl

Figure 12

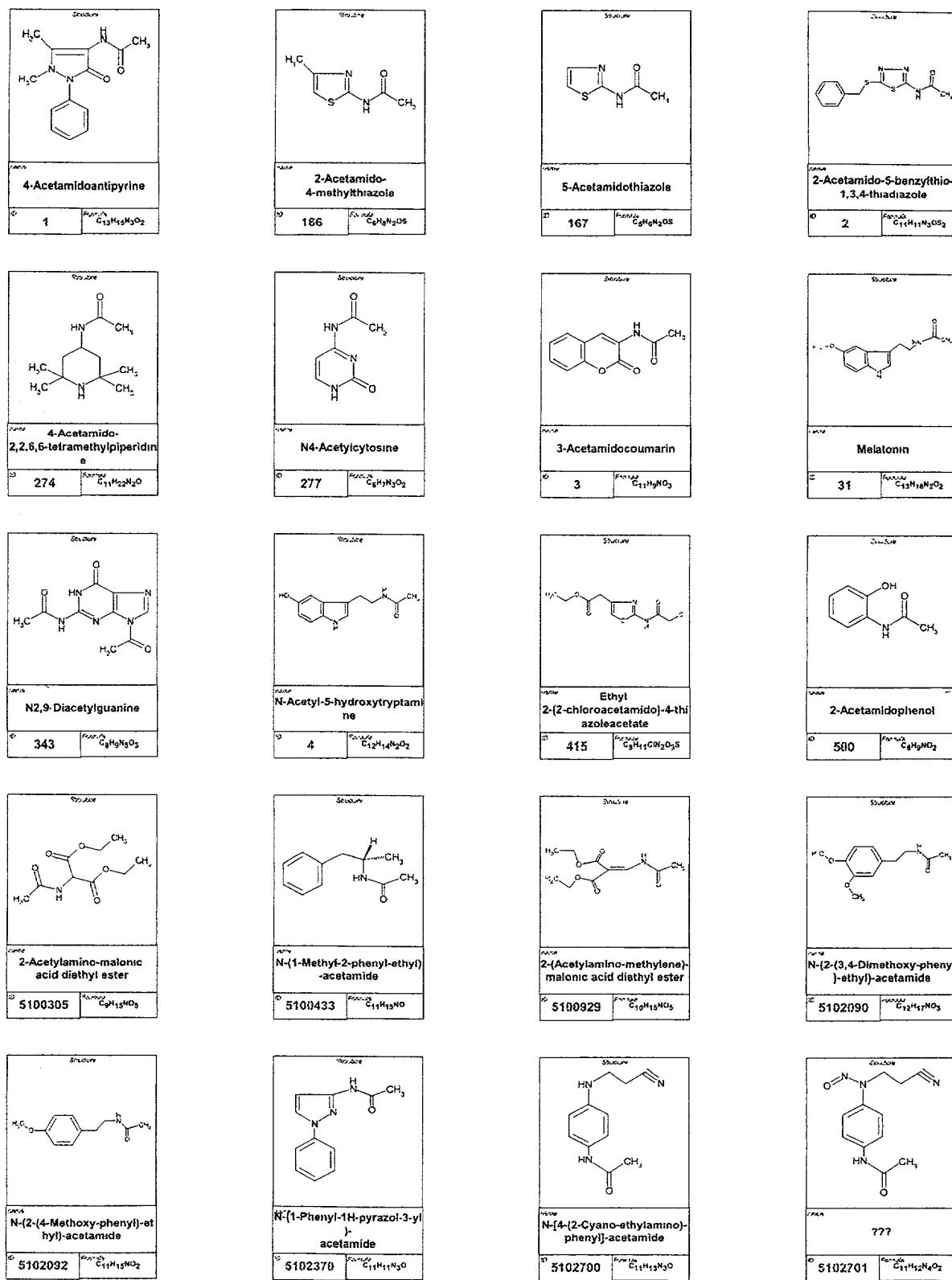


Figure 13-1

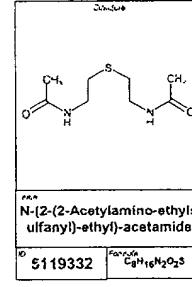
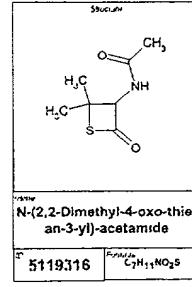
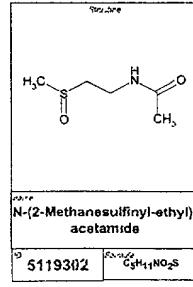
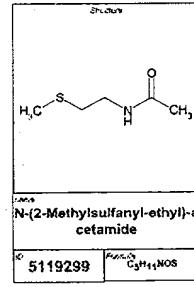
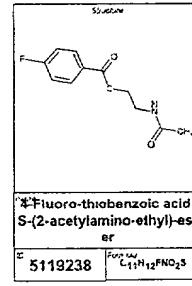
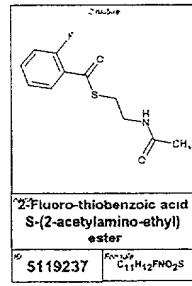
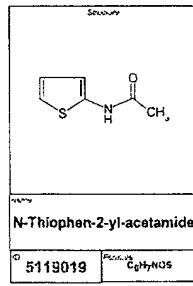
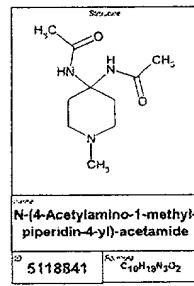
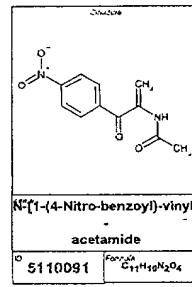
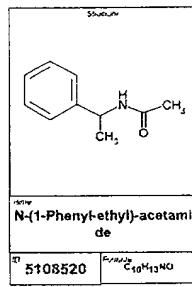
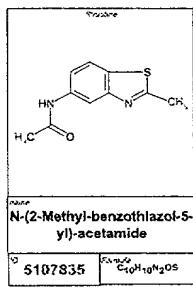
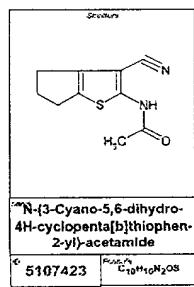
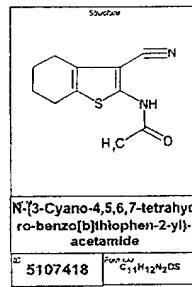
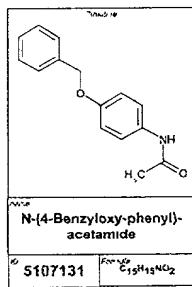
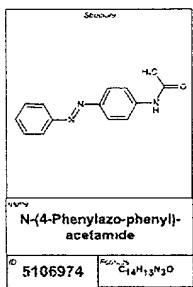
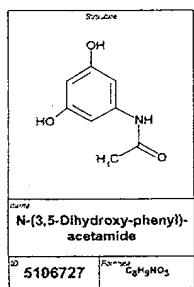
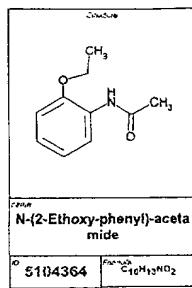
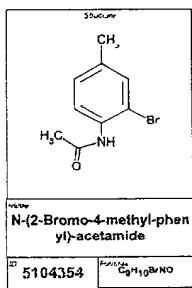
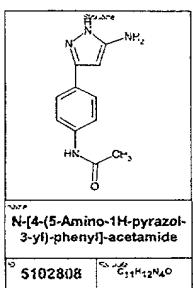
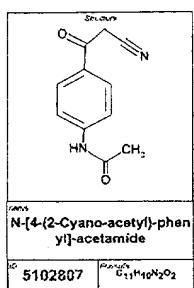


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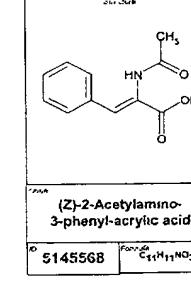
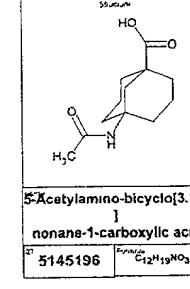
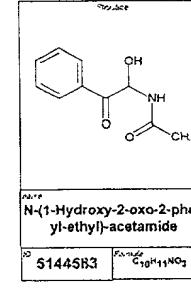
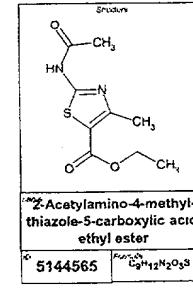
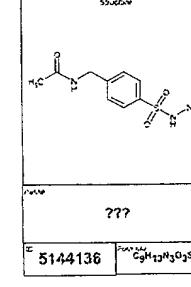
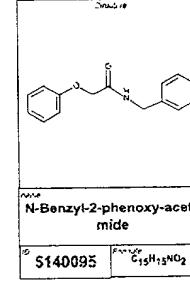
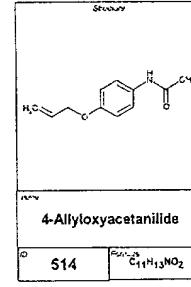
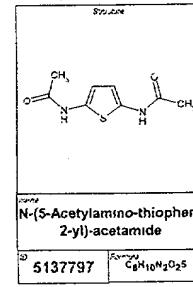
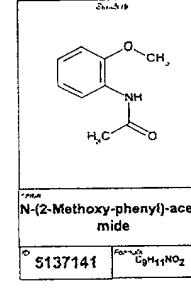
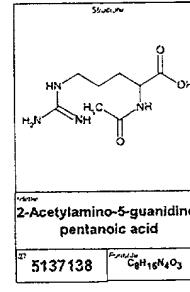
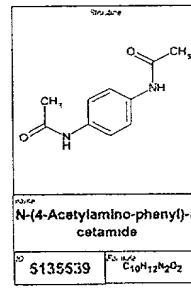
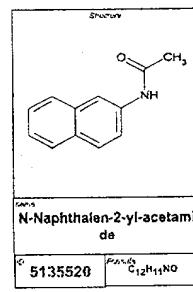
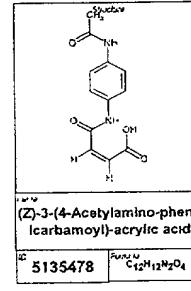
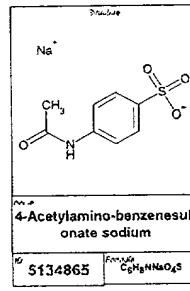
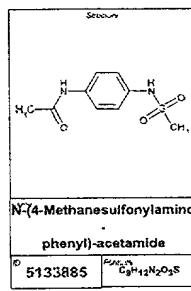
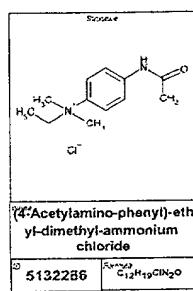
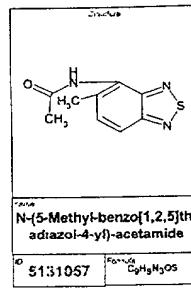
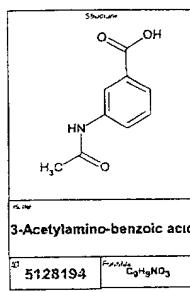
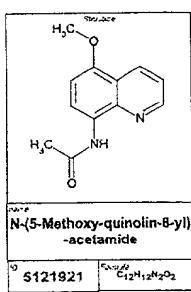
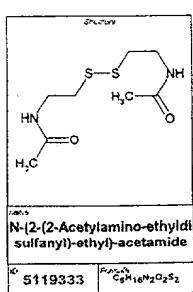


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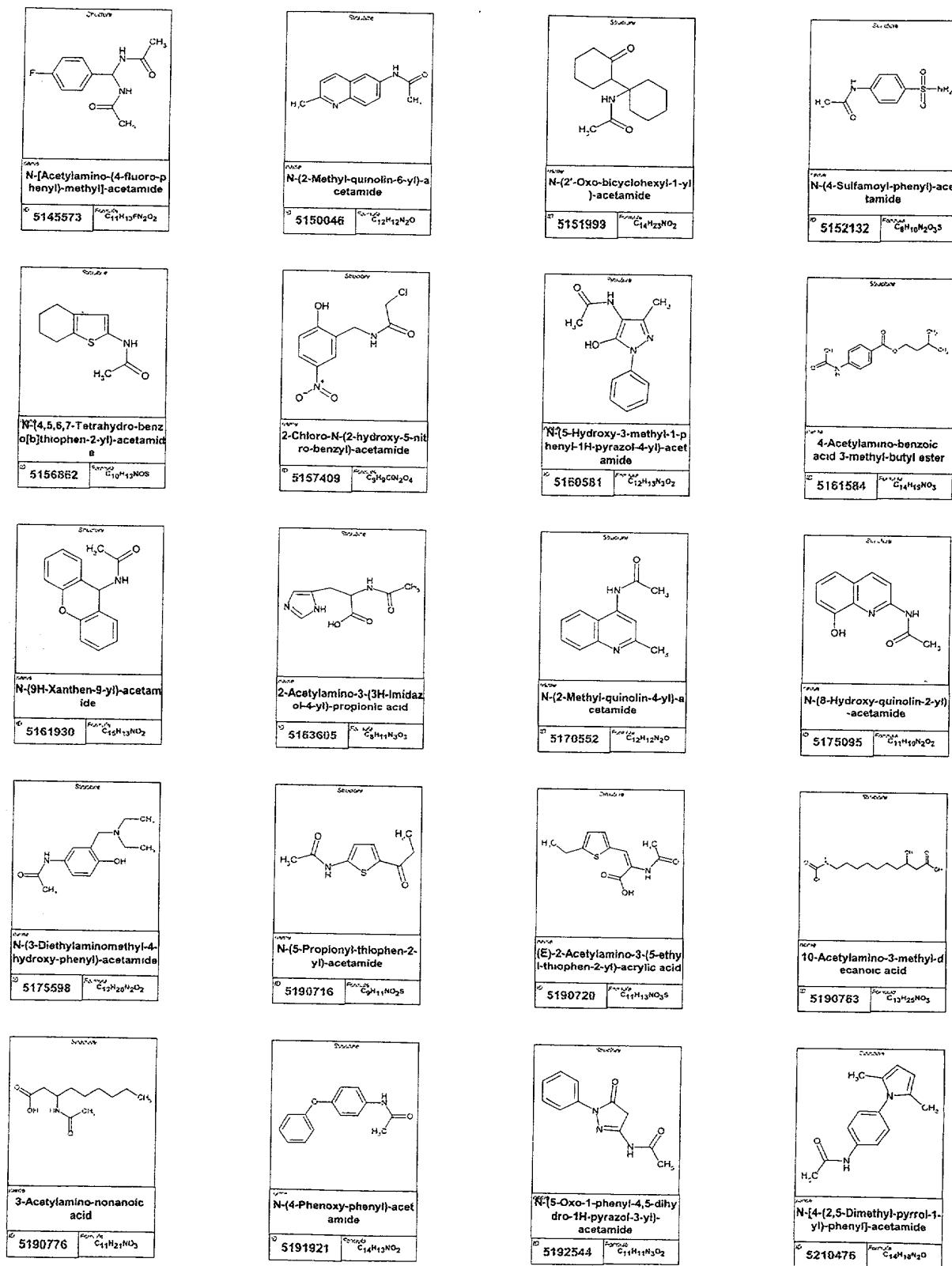


Figure 13-4

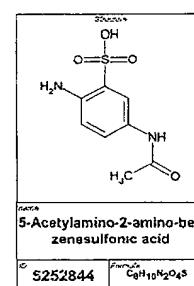
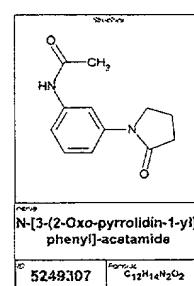
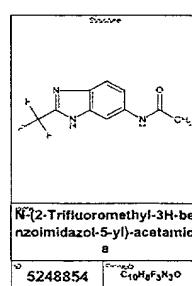
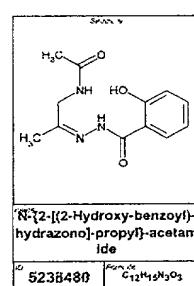
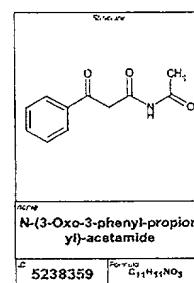
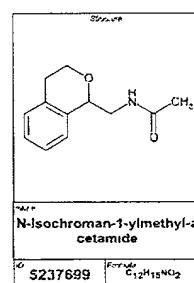
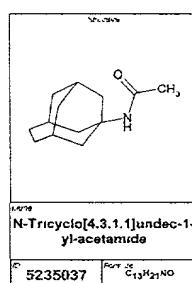
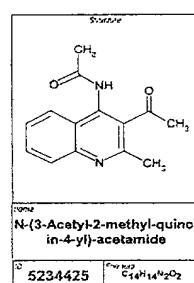
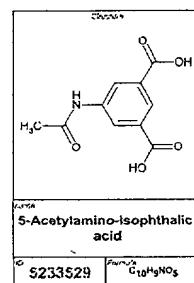
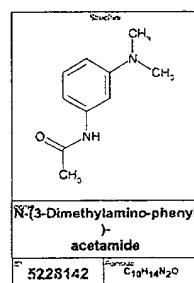
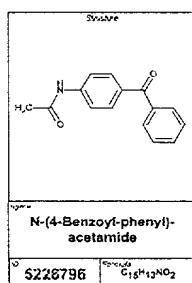
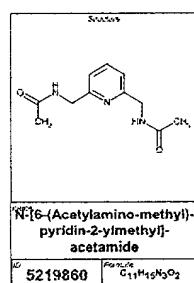
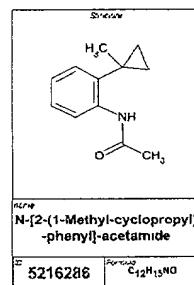
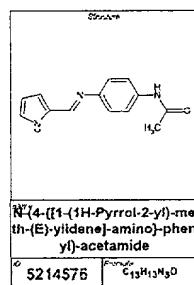
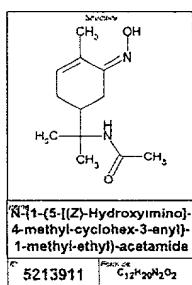
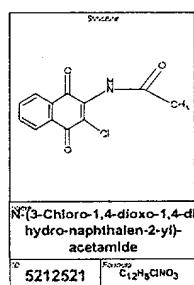
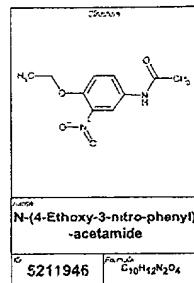
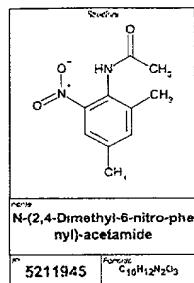
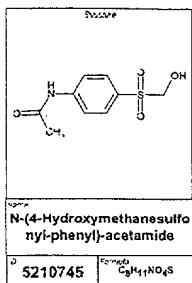
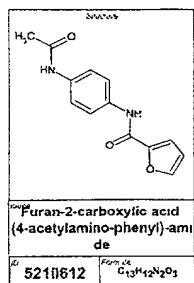


Figure 13-5

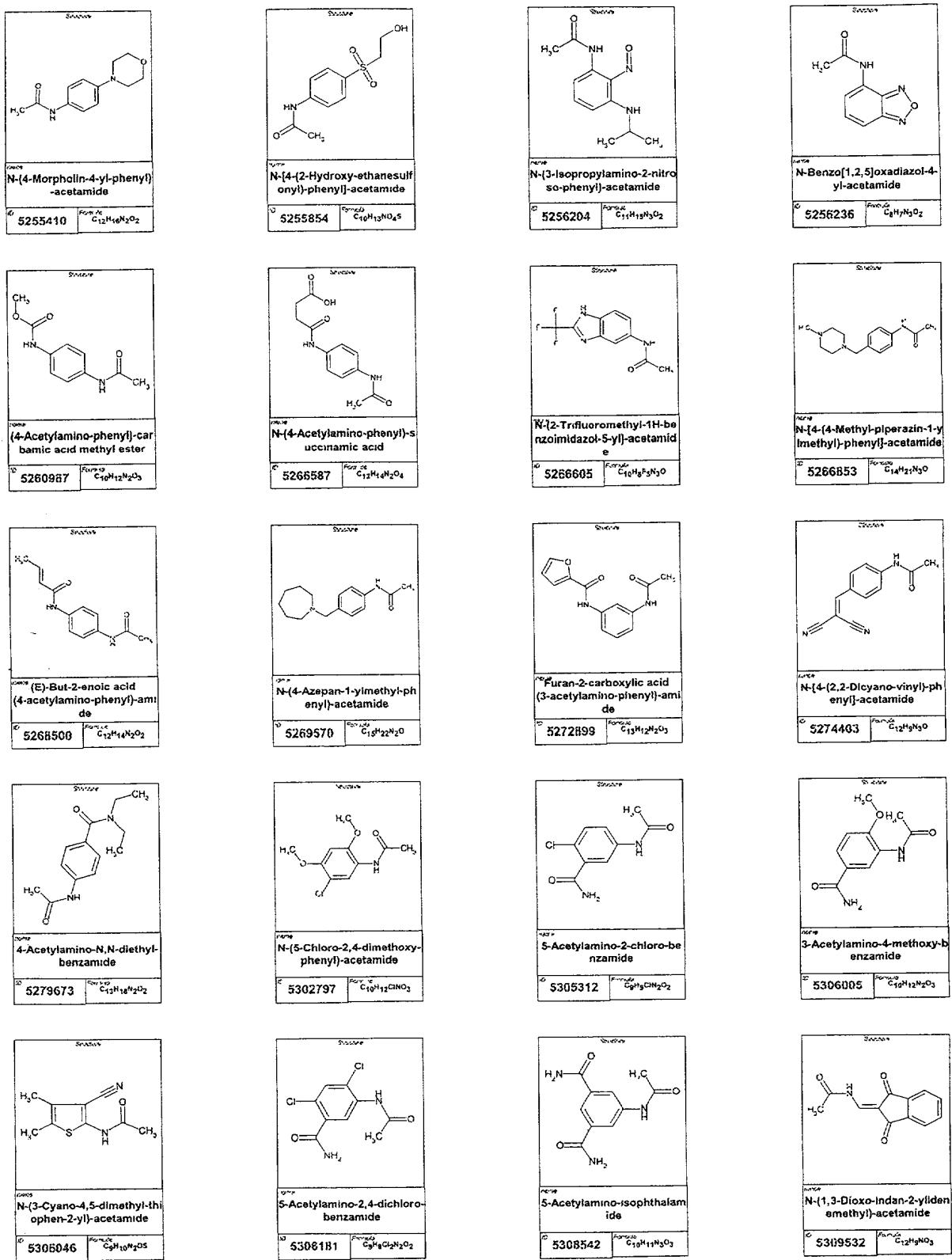


Figure 13-6

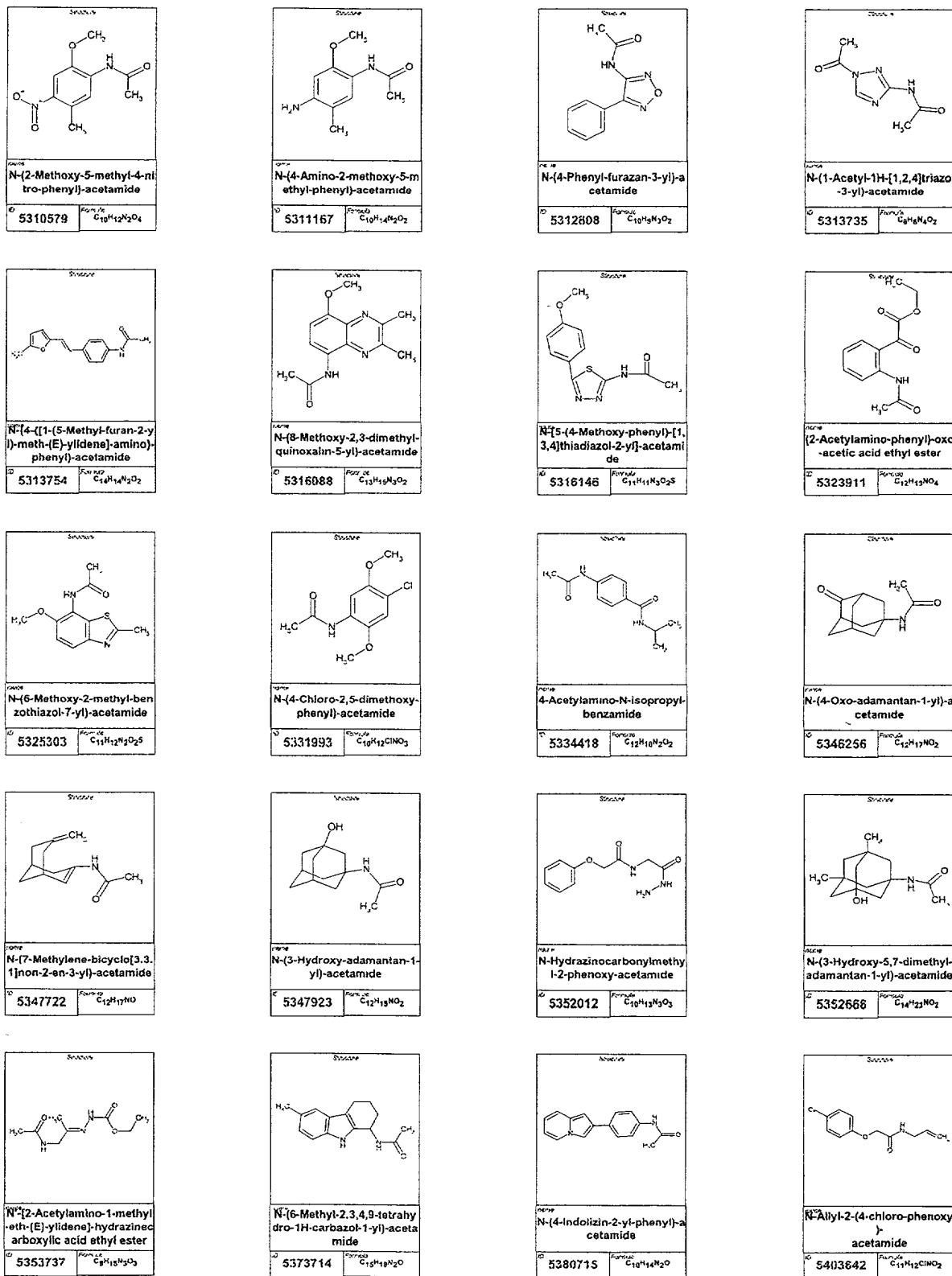


Figure 13-7

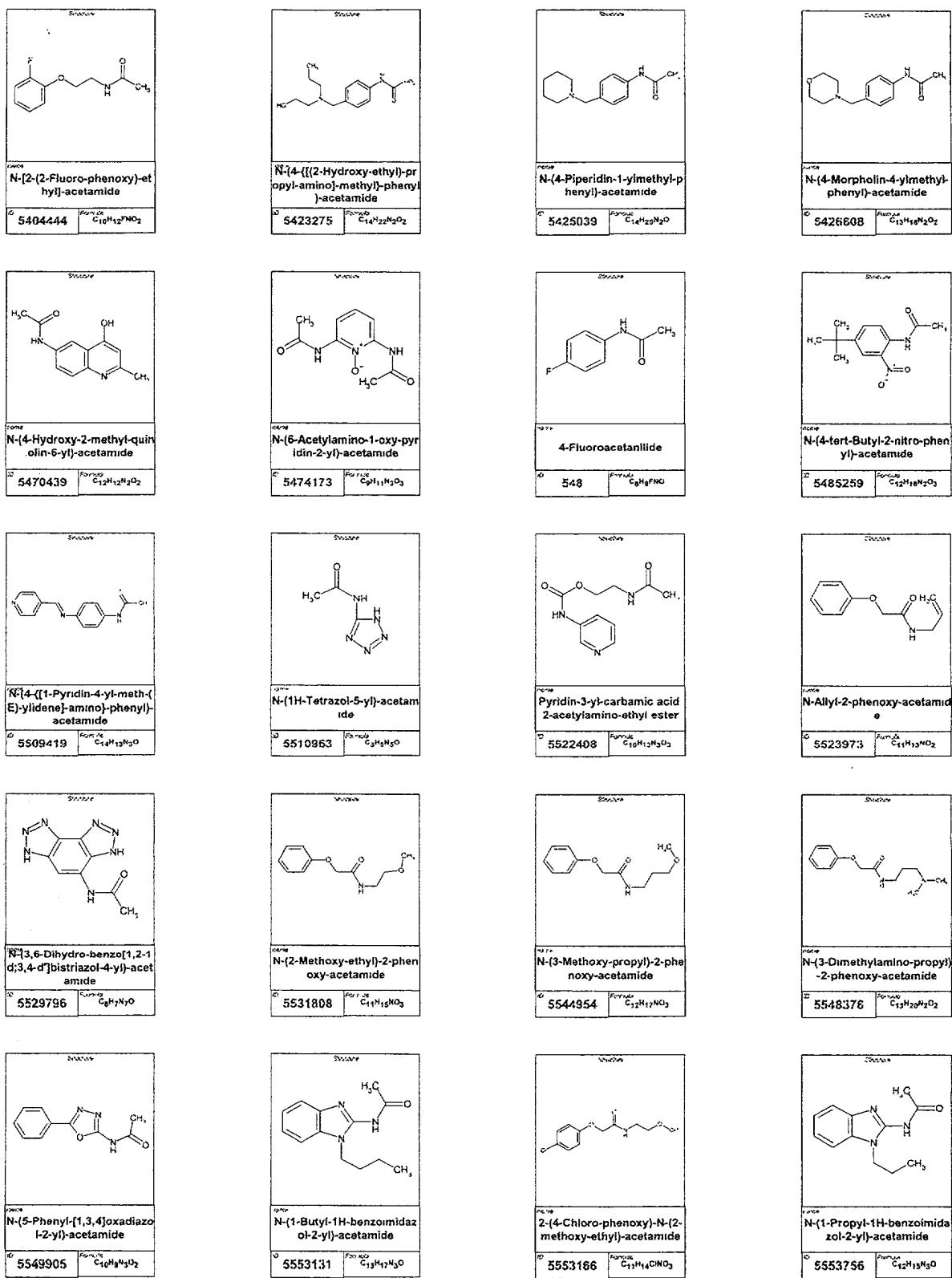


Figure 13-8

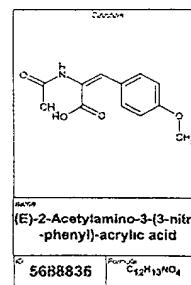
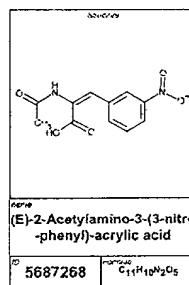
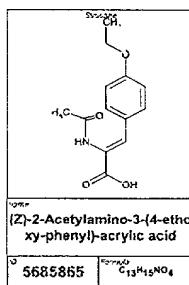
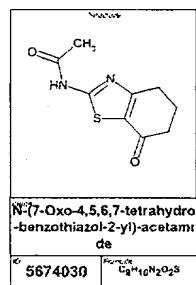
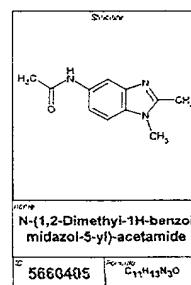
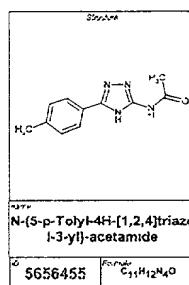
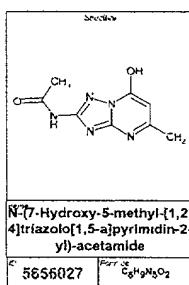
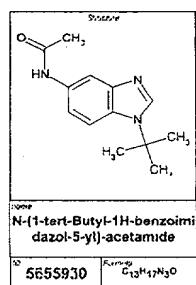
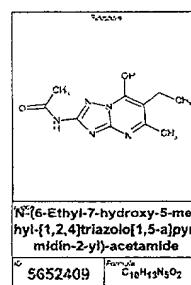
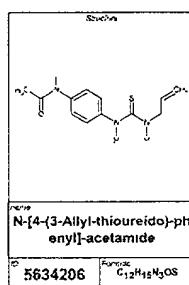
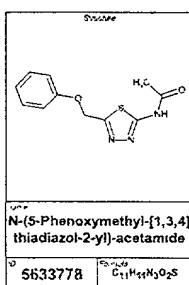
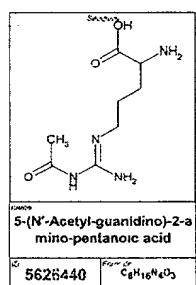
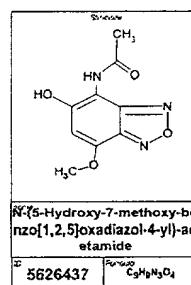
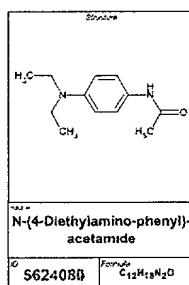
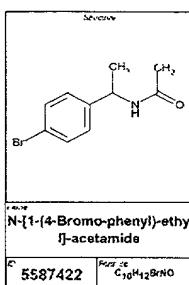
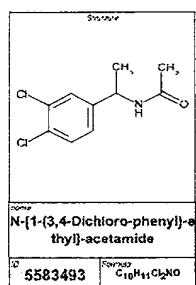
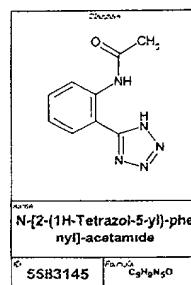
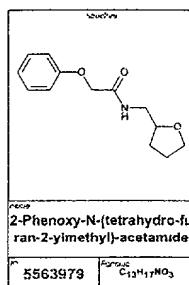
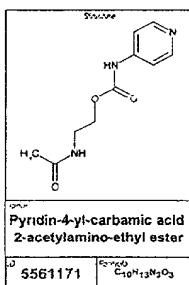
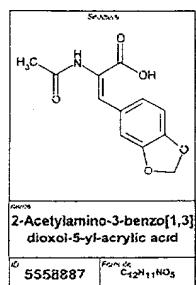


Figure 13-9

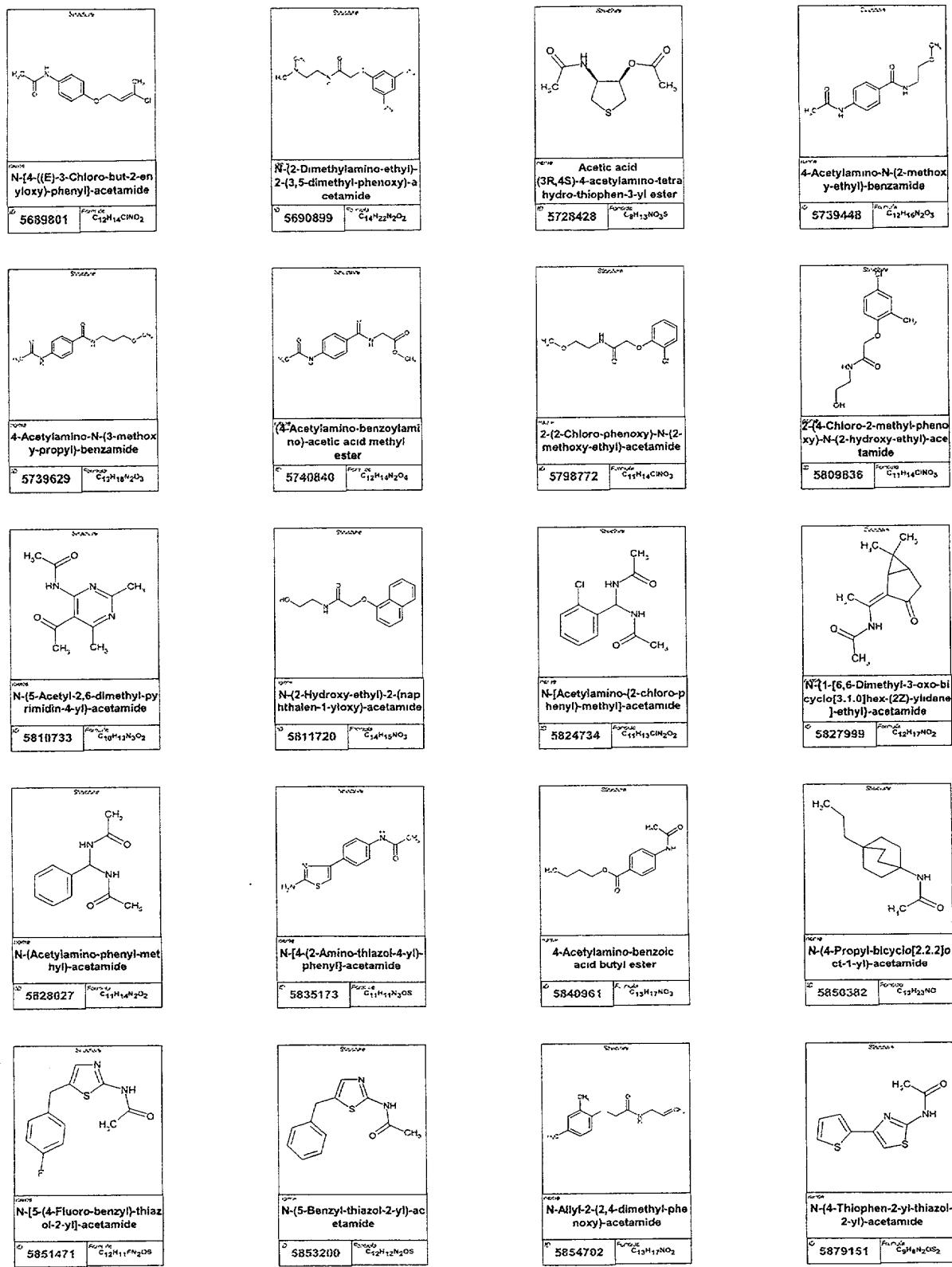


Figure 13-10

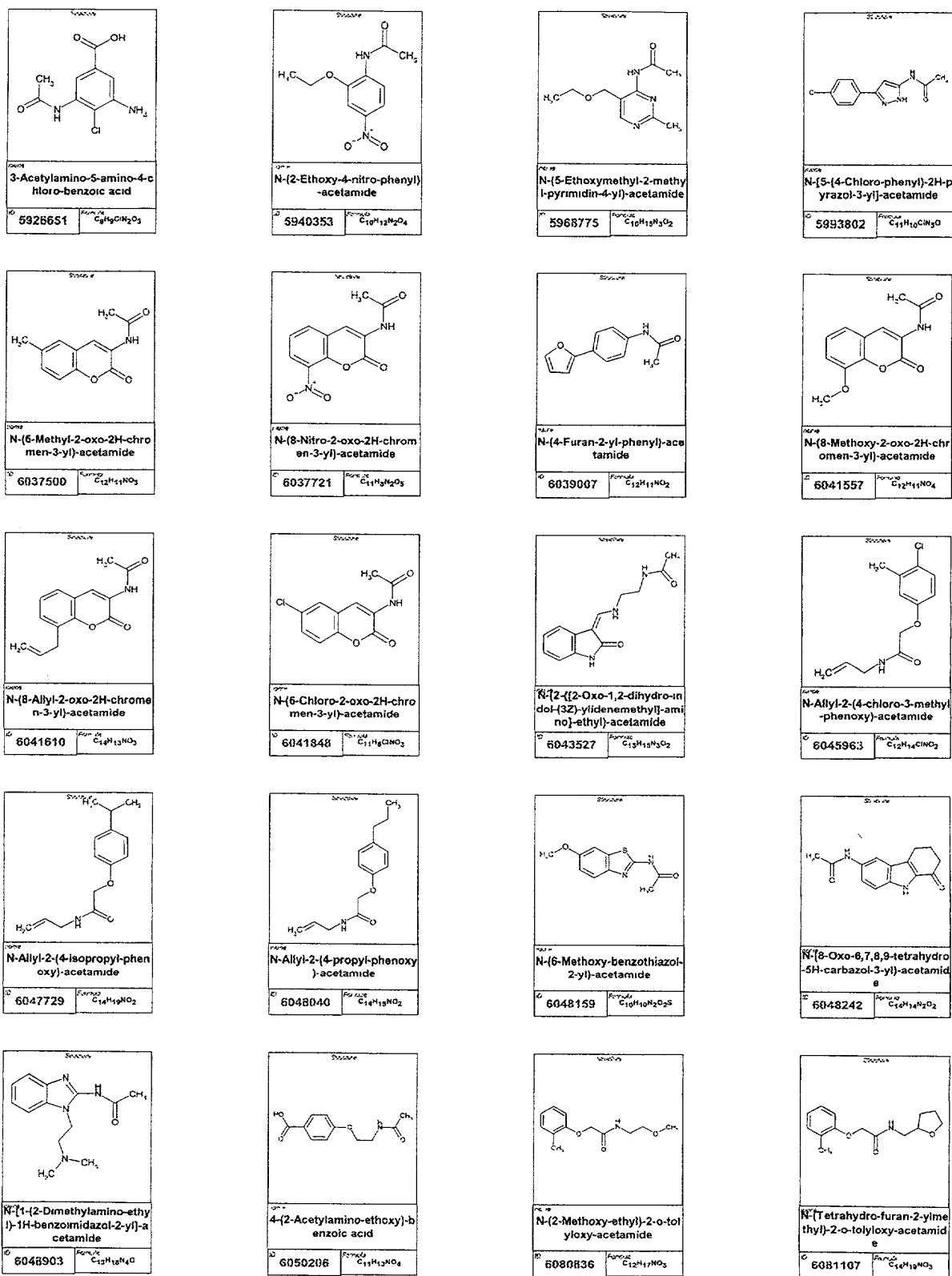


Figure 13-11

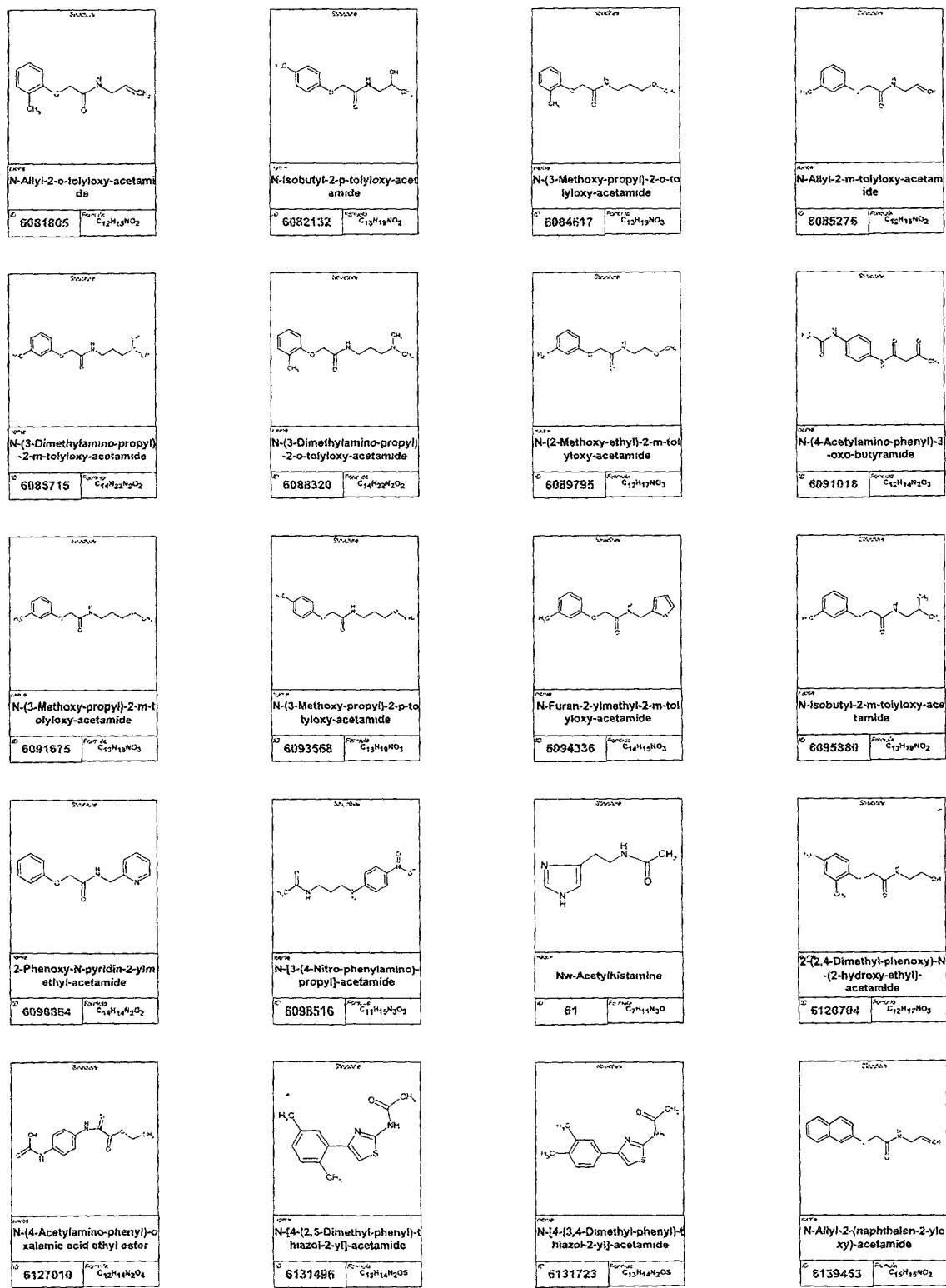


Figure 13-12

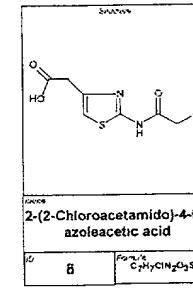
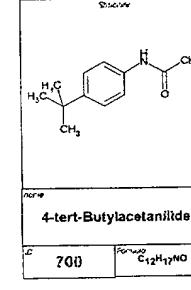
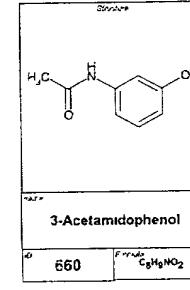
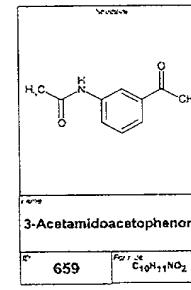
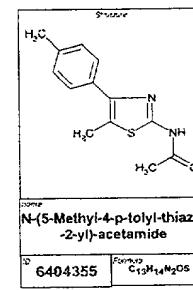
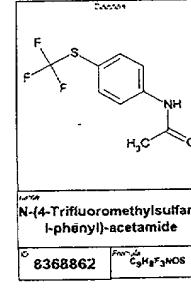
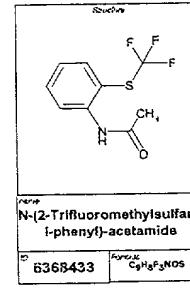
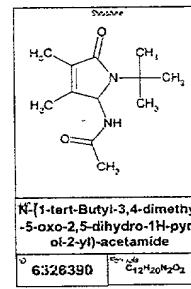
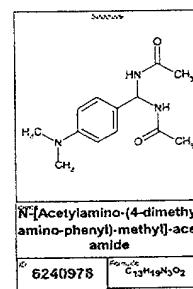
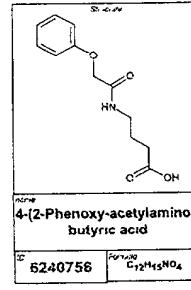
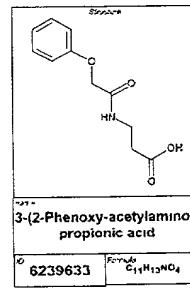
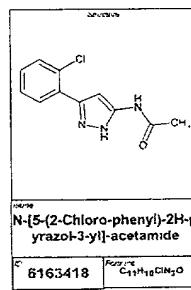
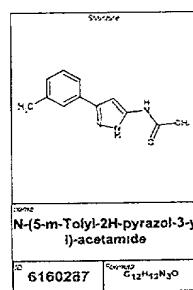
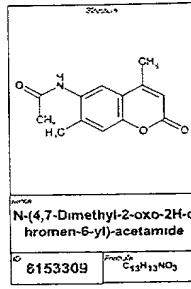
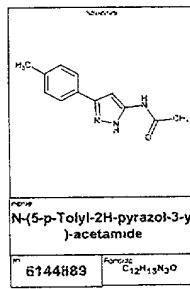
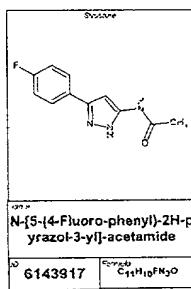
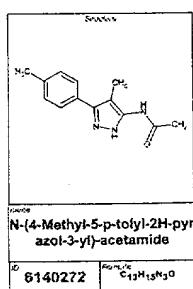


Figure 13-13